

REMARKS

Claims 1-4 and 6-22 are pending in this application.

Rejection Under 35 U.S.C. 102

The rejection of selected claims in paragraph 3 of the last Office Action under 35 U.S.C. 102 over U.S. patent 5,952,429 (Ikeda) is traversed. The claims contain many limitations not disclosed by Ikeda. The attention of the Examiner is invited to the section below entitled "Ikeda".

Claim Rejections Under 35 U.S.C. 103

The rejection of selected claims as obvious under 35 U.S.C. 103 in paragraph 5, 6, and 7 of the last Office Action over U.S. patent 5,952,048 (Tsubuko) in view of U.S. patent 4,673,718 (Ryntz) is traversed. The disclosure of Tsubuko is discussed below in the section entitled "Tsubuko". The disclosure of Ryntz is discussed below under the heading "Ryntz". It is undisputed that neither of these references alone disclose what is claimed. For reasons stated more clearly below it would not be obvious to combine these references in the manner suggested by the Examiner. Even assuming arguendo the obviousness of the combination the result would still not be subject matter within the scope of that claimed.

The Present Invention

A specified in pending claim 1, the present invention relates to an ink for ink jet printers which contains a pigment and an organic solvent. A silicone graft polymer is present in the ink and is dispersed in the organic solvent in the form of particles having a particle diameter of 0.01-0.3 μm and in a state such that the silicone graft polymer is adsorbed by at least a portion of the outer surface of the pigment. The organic solvent has a small polarity and an electrical resistivity of not lower than $10^9 \Omega \cdot \text{cm}_2$. The organic solvent is present in an amount of 50-10,000 parts by weight based on 100 parts by weight of the pigment.

As described in the specification on page 3, lines 7-19, according to the present invention, the steric repulsive force between pigment particles per se is enhanced to prevent sedimentation of the pigment as well as to improve dispersion stability and print stability. Furthermore, print quality is improved by the use of the pigment and the organic solvent of the present invention.

Ikeda

Ikeda claim 1, discloses a carbon black graft polymer having a block- or graft-copolymer graft chain, which is obtained by a process comprising mixing under heating carbon black with a block- or graft-copolymer comprising a segment (A) having a reactive group

capable of reacting with a functional group on the surface of said carbon black and a segment (B) different in skeletal structure from said segment (A). Thus, the Ikeda graft polymer is reacted with a functional group of the carbon black to bond the carbon black.

In the present invention, the graft polymer is adsorbed by the pigment such as carbon black as described above.

The present invention is therefore different from Ikeda in the relation of the carbon black and the graft polymer. Ikeda does not disclose or suggest the above-described constitution of the invention.

Tsubuko

Tsubuko discloses a recording method by electrically charging an ink composition and ejecting the ink composition from a pen-plotter nozzle onto an electrically charged substrate. The ink composition comprises a carrier medium and charged particles. It is essential that the charged particles have a certain specific charge quality, or that the ink composition has a certain specific resistance as specified in Tsubuko claim 1. As described in Tsubuko column 3, lines 23-32, ink jet printing with high density and high resolution can be effected on a substrate made of a material such as paper, plastics or a metal, and excellent image fixing performance can be attained by ejecting the ink composition with the application of a relatively low voltage.

Thus, Tsubuko is different from the present invention wherein presence of charged particles is not essential; it is not required that the charged particles have a certain specific charge quality, or the ink composition has a certain specific resistance.

Moreover, in the present invention, as described in the specification on page 3, lines 7-18, the pigment such as carbon black in the form of particles having a particle diameter of 0.01-0.3 μm is dispersed in an organic solvent in such a state that a silicone graft polymer is adsorbed onto the surface of the pigment, steric repulsive force between pigment particles per se is enhanced to prevent sedimentation of the pigment, and, besides, dispersion stability is increased and print stability is improved. Furthermore, print quality is improved by the use of the pigment and the organic solvent.

The above technical concept of the claimed invention is not at all disclosed or suggested in Tsubuko.

Ryntz

Ryntz discloses a novel hydroxy functional polysiloxane graft copolymer having specific structure. In column 3, lines 5-8, Ryntz states that the siloxane moieties incorporated into the graft polymer advantageously provide enhanced flexibility, durability, weatherability and provide lower viscosity of coatings. In column 3, lines 60-64, Ryntz states that the Ryntz flexible coatings have

superior weathering properties, excellent adhesion to metal and plastic, thus making them well suited for use as coatings on, e.g., motor vehicle components.

Thus, Ryntz is irrelevant to the present invention with respect to both constitution and advantages.

Conclusions

As seen from the above-described comparison of the present invention with the cited references, the present invention is both novel and unobvious over the cited references. All the cited references are irrelevant to the present invention with respect to constitution and advantages, and give not hint of how to arrive at the present invention. Any skilled artisan would not think of the present invention from the teachings of the references even if these teachings are unjustly combined. Accordingly, the prior art rejections should be withdrawn.

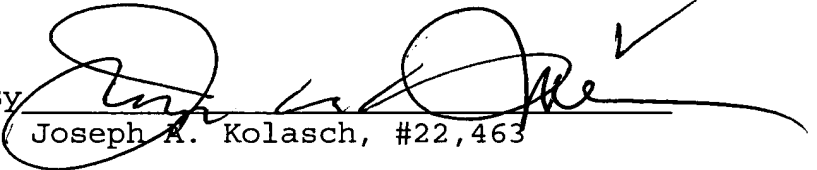
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact David R. Murphy (Reg. No. 22,751) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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